

Amendments to the Specification:

[0007] In addition, frequency droop is permitted to a certain extent by the Bluetooth specification. The amount of frequency droop permitted is 25 kHz for short packets (single time slot of 625 μ sec) and 40 kHz for long packets (3-5 slots). It is noted that some open loop modulators operate by remaining closed loop until data is to be transmitted at which time they open the loop and modulate the oscillator with the packet's data, ~~potentially resulting in frequency droop throughout the payload.~~

[0011] The present invention provides a mechanism for estimating the modulation noise in a transmitter to determine whether it complies with a certain allowed limit defined by a standard or by the device's specifications. The on-chip modulation noise estimation mechanism (MNEM) of the present invention is adapted to provide the same pass/fail indication that would be provided by alternative external test equipment of high cost thus reliably determining whether a component would or would not qualify under the standard or targeted modulation and/or phase noise specifications. It does not, however, perform the test in the same manner as the prior art test equipment described in the Background Section hereinabove. This is because analysis performed directly on the high frequency modulated signal is very difficult ~~and/or costly~~ in practice.

[0012] The present invention is suitable for use in devices that employ closed loop or so-called 2-point modulation architectures in their transmitters. Such modulation schemes use direct oscillator modulation with a phase locked loop (PLL) to maintain frequency stability. In these closed loop designs, the baseband signal to be transmitted is fed to two points in the loop: the reference input and the RF section. ~~In such a structure, the error signal of the PLL reflects~~

the amount by which the phase of the RF oscillator deviates from the phase trajectory dictated by the modulating signal, thus making this signal useful for the evaluation of modulation distortion and oscillator phase noise.